

What is claimed is:

1. An apparatus comprising:

a plurality of base stations, each base station comprising:

a positioning receiver to generate base station location information, each positioning receiver having a known location;

a link to a network to transmit said base station location information;

a correction information calculation module coupled to the network to receive base station location information from each of the plurality of base stations via the network, the correction information calculation module to calculate correction information as a function of the base station location information and the known location for all of the plurality of base stations.

2. The apparatus of claim 1 further comprising:

a plurality of non-selected base stations, each also having a known location and a positioning receiver to generate base station location information, each non-selected base station also having a connection to the network to transmit said base station location information,

wherein said correction information calculation module further comprises:

a station selection module to select location information from said plurality of base stations and to omit location information from said plurality of non-selected base stations from computation of said correction information.

3. The apparatus of claim 2 wherein said station selection mechanism is to select said plurality of base stations for use in computing correction information based at least in part on each of the plurality of base stations utilizing a set of satellites that is also utilized by a mobile device for which the correction information is being computed.
4. The apparatus of claim 2 wherein said station selection module is to make an initial selection of base stations based on coarse location information and then to make a secondary selection of base stations, which may or may not differ from the initial selection, based on a more precise roving device location computed using a correction information computed using the initial selection.
5. The apparatus of claim 2 wherein said correction information calculation module comprises:
 - an integrity monitoring module to detect and exclude faulty location information from a base station.
6. The apparatus of claim 5 wherein said integrity monitoring module is to detect and exclude location information corrupted by cycle slip and code multipath errors.
7. The apparatus of claim 5 wherein said correction information calculation module further comprises:
 - a measurements integration module to stochastically integrate location

information received from said integrity monitoring module to derive said correction information.:

8. The apparatus of claim 1 wherein each link comprises a first network interface to receive base station location information from a positioning receiver at a base station and to generate a first set of signals for transmission of said base station location information from said positioning receiver.
9. The apparatus of claim 8 wherein said first network interface packetizes said base station location data for network communication to said correction information calculation module.
10. The apparatus of claim 8 wherein said first network interface comprises a telephony communications interface, the apparatus further comprising:
- a second link to receive said first set of signals via one or more signal lines from the base station and to extract said base station location data;
 - a second network interface to receive said base station location data from said second link and to generate a second set of signals for transmission of said base station location data to the correction information calculation module via the network.
11. The apparatus of claim 1 wherein said link comprises a modem to modulate base station location information from a positioning receiver into a modulated signal for

transmission over a telecommunications link.

12. The apparatus of claim 11 further comprising:

a second link to receive said modulated signal from said telecommunications link and to extract said base station location information;
a network interface to receive said base station location information from said second link and to generate a second set of signals for transmission to the correction information calculation module via the network.

13. The apparatus of claim 1 further comprising:

a receiver module to communicate with a positioning system to determine preliminary position-related information; and
a precise location calculation module to calculate a receiver location from said correction information and said preliminary position-related information.

14. The apparatus of claim 13 wherein said precise location calculation module and said receiver module are included in a roving receiver device, wherein said roving receiver device receives said correction information from said correction information calculation module via a message on the network that is converted to a wireless transmission from one of said plurality of base stations to said receiver module.

15. The apparatus of claim 13 wherein said precise location calculation module is located remotely from said receiver module, wherein said receiver module transmits said

preliminary position-related information via a wireless message that is converted to a message that is transmitted on the network to said precise location calculation module.

16. The apparatus of claim 14 wherein said preliminary position-related information comprises a set of pseudoranges.

17. The apparatus of claim 14 wherein said correction information comprises one or more of LAAS-based pseudorange corrections and LAAS-based carrier-phase corrections.

18. An apparatus comprising:

a plurality of cellular communications base stations, each base station comprising:

a positioning receiver to generate base station location information,

each positioning receiver having a known location;

a link to a network to transmit said base station location information;

a correction information calculation module coupled to the network to receive base station location information from each of the plurality of base stations via the network, the correction information calculation module to calculate correction information as a function of the base station location information and the known location for all of the plurality of base stations;

a station selection module to select location information from a selected subset of said plurality of base stations and to omit location information from an

[illegible]

formation;

module to communicate with a positioning system;
a position-related information; and
a position calculation module to calculate a position
information and said preliminary position
information;
claim 18 wherein the network is the Internet;
a position calculation module and said state

claim 18 wherein the network is the In

by a server connected to the Internet.

claim 19 further comprising:

of additional cellular base stations that

tion to said correction information ca

prising:

interface to receive base station location
of base stations from a network;
information calculation module to c
tion for a mobile device as a function
tion from all of the plurality of base s

21.

surface to receive base station
of base stations from a network

information calculation module to compute
n for a mobile device as a function of base
n from all of the plurality of base stations.

r comprising:

a station selection module to select said plurality of base stations as a selected set from a larger plurality of base stations, said selected set being chosen as being in proximity to said mobile device.

23. The apparatus of claim 22 wherein said station selection module is to select said selected set of base stations based on said selected set of base stations being in view of a set of satellites also being used by said mobile device for which said correction information is being computed.

24. The apparatus of claim 22 wherein said station selection module is to make an initial selection of base stations based on coarse location information and then to make a secondary selection of base stations, which may or may not differ from the initial selection, based on a more precise roving device location computed using an initial correction information computed using the initial selection of base stations.

25. The apparatus of claim 21 further comprising:
a data link to receive rover location information.

26. The apparatus of claim 25 wherein said data link comprises a link to an Internet service provider.

27. The apparatus of claim 25 wherein said data link comprises a link to a cellular phone service provider.

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claim 21 further comprising
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on computed using said cor

comprises:

an integrity monitoring module to detect and exclude faulty location information from a base station.

information corrupted by cycle sk

further comprises:

a measurements integration module to stochastically integrate location information received from said integrity monitoring module to derive said correction information.

32. An article comprising a machine readable medium

computing correction information for a mobile device as a function of
contents of a subset of said plurality of location information
communications and known locations of said plurality of base stations.

33. The article of claim 32 wherein the set of operations further comprises:
selecting said subset based on a location of said mobile device.

34. The article of claim 33 wherein the set of operations further comprises:
computing a second subset based on a precise location determined by a precise
location computation;
computing a precise location as a function of said correction information and
coarse location information determined by said mobile device.

35. The article of claim 33 wherein the set of operations further comprises:
providing location specific data based on a location computed using said
correction information.

36. A method comprising:

receiving a plurality of location information communications from a plurality
of base stations via a network;
computing correction information for a mobile device as a function of
contents of a subset of said plurality of location information
communications and known locations of said plurality of base stations.

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f claim 37 further com
ng an initial estimate

subset;

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f claim 36 wherein sel

subset of the plurality
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f claim 36 further com

ing a precise location
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of claim 10, wherein

signals for transmission of said base station location data from said positioning receiver.

46. The base station of claim 45 wherein said first network interface packetizes said base station location data for network communication to a correction information calculation module.

47. The base station of claim 45 wherein said first network interface comprises a telephony communications interface, the apparatus further comprising:

a second link to receive said first set of signals via one or more signal lines from the base station and to extract said base station location data;
a second network interface to receive said base station location data from said second link and to generate a second set of signals for transmission of said base station location data to the correction information calculation module via the network.

48. The base station of claim 44 wherein said link module comprises a modem to modulate base station location information from a positioning receiver into a modulated signal for transmission over a telecommunications link.

49. The base station of claim 48 further comprising:

a second link to receive said modulated signal from a communication link from the base station and to extract said base station location data;

a network interface to receive said base station location data from said second link and to generate a second set of signals for transmission to a correction information calculation module via the network.

50. The base station of claim 44 wherein said network is the Internet.

51. The base station of claim 44 wherein said network is a land-based dedicated communication channel.

52. A method comprising:

transmitting location information for a plurality of base stations to a networked correction information module;
receiving correction information from said networked correction information calculation module;
transmitting said correction information to a mobile device.

53. The method of claim 52 further comprising:

receiving coarse location information from a mobile device;
transmitting said coarse location information to said networked correction information calculation module.

54. The method of claim 53 wherein transmitting said coarse location information to said networked correction information module comprises transmitting said coarse location

information to an Internet service provider.

55. The method of claim 52 further comprising:

transmitting precise location information calculated by said mobile device
from said correction information to a service provider;
transmitting location specific data from said service provider to said mobile
device.

56. A method comprising:

computing location information for use in a computation of a location of a
mobile device;
charging for the location information.

57. The method of claim 56 wherein computing location information comprises

computing correction information from a plurality of networked positioning receivers
in known locations.

58. The method of claim 56 wherein charging comprises charging an application service
provider for the location information.

59. The method of claim 56 wherein charging comprises charging for the availability of
location specific services.

